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Editorial

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The epistemic project of the addicted brain: Towards a socio-historical understanding

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"This tiny bit of the brain could offer clues about addiction. It's responsible for getting you to stop doing things", reads the headline in the most viewed piece on the phenomenon of addiction on Google News in December 2017 (Wetsman, 2017). The article goes on to explain that new research "points to a small area of the brain, called the right ventrolateral prefrontal cortex (rVLPFC), as the region responsible for taking in contextual information (like the spider) and using it to update the original plan". The discovery of this area for contextual decision-making is presented as a clue to solving addiction problems.

An audit of hundreds of media items by my colleague confirms that this is a very typical way of media reporting on addiction in today's world. Sequences of information – some correlations of intent and areas in the brain – are made to represent revolutionary knowledge that can solve the problem and mystery of addiction. For an ordinary reader it is impossible to know how well grounded the excitement over a finding such as the one of the ventrolateral prefrontal cortex really is.

Professor Emeritus of pharmacology Harold Kalant is among those who have expressed great concern over the promises made by brain-based understandings of addiction. He has long remained firmly sceptical towards the use value of findings by addiction brain science. For example, he points out that most of the research concerning the brain changes presumed to underlie addiction has not even been able to prove convincingly the presence of addiction in its experimental subjects (Kalant, 2015, p. 54). According to Kalant, it is impossible to explain and understand addiction by pursuing "the analytical study of drug interactions with the nervous system at ever-finer levels of molecular structure and function" (2010, p. 787).

The addicted brain has raised a legion of other questions. These have concerned basic reliability and validity issues, such as the nature of brain images as evidence, or, the reductionist foci on one motivational impulse, such as craving or cue dependency. The critique that has viewed the praxis of the addiction neuroscience

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in a principle societal framing has often ended up confirming the asymmetry between the many ethical concerns about and limited contribution of the research in view of the enormous amounts of funds invested in it (for critical discussions, see, e.g., Carter & Hall, 2011; Miller, Carter, & De Groot, 2012).

When the excitement and the critique are viewed as parallel trends, the observer may wonder if it is all part of a great scam. And in which case, on whose part?

In this editorial I will propose two ways that can help us understand the rise of the addicted brain and the discussion that surrounds it. These entail stepping out of and stepping into the "epistemic state of nature", within which we seek true beliefs and knowledge on the phenomenon that we are trying to define (Fricker, 2011, p. 56). The "stepping out" can be achieved by a socio-historical view on the Brain Disease Model of Addiction (BDMA) and its surrounding discussion. This can help us unfold the context in which brain-based addiction materialises in our collective consciousness.

The "stepping in" involves re-situating ourselves as addiction researchers as part of the actual phenomenon of addiction. The ways in which the field of addiction research has progressed as an academic field may explain why we are rather unprepared to take on the great debates surrounding the BDMA. In fact, the research field's own modus operandi is likely to be the reason why the addicted brain has reached its current position and saturation in the first place.

The Addiction Theory Network

The ethical concerns involved in the promised and actual use of brain-based findings have raised great concerns among scholars in the field of addiction research. A recent initiative to discuss the influential position of the BDMA has been taken by the Addiction Theory Network (ATN), founded in 2016. The initiators are the UK-based addiction psychologists Nick Heather and Derek Heim. The ATN group first gathered as signatories behind a letter to the editor in *Nature* by Heim et al. (2014), protesting against the claim that there was a consensus among scientists of addiction as a chronic relapsing disease which changes the structure and function of the brain.

The ATN describes itself as "opposing the dominant influence of the BDMA and collaborating to develop alternative ways of understanding and responding to addiction" (Heather et al., 2017, p. 1). It has over 90 members, who, at times, conduct rather lively discussions on an email list. The network consists of scholars and researchers with different backgrounds, mostly in the field of addiction, all of whom share a concern about the extent of influence given to the BDMA. During 2017 the ATN arranged different kinds of sessions at conferences and events, and several of its members have written editorials, papers, and think pieces about the nature of the phenomenon of addiction (cf. Fenton & Wiers, 2017; Heather, 2018). It is indeed a welcome forum for ventilating views and engaging in some principle discussions that urgently need to be acknowledged.

The "theory" part of the network's name is to be understood in heuristic terms: the discussion has thus far concerned mainly the ways in which to understand the phenomenon of addiction in a truthful, knowledge-based and worthwhile way. In an editorial with six summary chapters in the journal *Addiction Research & Theory*, the ATN has announced the European launch of the network (Heather et al., 2017). The argumentation of the authors pertains to such aspects as the social recovery experience as challenging the brain-based view on addiction; the inconsistency in the claims of involving obesity (=food) in the addicted brain; problematising the autonomy and competence view in the BDMA and how personal empowerment is excluded; and the concept of disorder as trivialising and inherently morally invested. The editorial concludes that it is clear that "there are a range of views on what is wrong with the BDMA, both from a strictly scientific perspective and from a consideration of its

consequences for the avoidance and reduction of harm due to addiction" (Heather et al., 2017).

The discussion by the network has thus far come to reflect the epistemic agents participating in it by concerning mainly the ontology of the phenomenon under study (addiction). For debating the contribution of the BDMA for furthering society on a principle level, the current focus of the discussion may however be insufficient. We might need to step out of our evidence-producing machinery for a while and reflect on the developments in a *socio-historical context*, to address the question: why are we having the discussion on the BDMA in the first place?

Stepping out: A socio-historical framing

To understand why certain views on addiction appear and achieve saturation in different times, one can apply a framework of a Foucauldian sociology of knowledge. Here, epistemic views are seen as part of governance regimens intrinsically linked with transformations in the rationalities and technologies of political power in advanced prosperous liberal democracies. Science and technology have of course long been firmly located within the political arena because of their central concern to the state, and to all governance and power exercise.

A case in point of how such a Foucauldian perspective has been fruitful in the past is Harry Levine's classic article on the discovery of addiction (1978). In this, he accounts for how the idea of alcohol as a problem appeared (in North America) as entangled with certain societal developments as well as with circumstances in the history of ideas and concepts. Definitions of habitual drunkenness were shaped by developments in thought about deviance in general and by an ideology of "inner reference" (cf. Fraser, Moore, & Keane, 2014, p. 5, referring to Carr, 2010). In the 19th century, the concept of addiction started to be interpreted by people in the light of their struggles with their own desires. Levine argues that this was something new since during the colonial period most people had not been especially concerned with drunkenness; drunkenness was just a natural, harmless consequence of drinking. It was post-colonial temperance that started to define drunkenness as a problem and articulating the need to drink as "inner directed".

The idea of addiction made sense not only to drunkards, who came to understand themselves as individuals with overwhelming uncontrollable desires, but also to the middle classes, who were struggling to keep their desires in check. "[It] seemed a completely reasonable idea that liquor, a substance believed to weaken inhibitions when consumed (intoxication), could also deprive people of the ability to control their behavior over the long run (addiction)", explains Levine (1978, p. 165). The idea made rational sense to people at this time and place and was therefore internalized into collective views on the problem. Today, references made to the notion of addiction are normalised as part of everyday life and the phenomenon is seen as "naturally given" (Chandler, 2002, p. 235).

In order to achieve the same long-view perspective on today's addiction ideas, we can pretend that we have stepped 50 years into the future and are now looking back to the 2010s and 2020s. By then, we might be better equipped to articulate the liberalistic science-entangled developments that have, together with certain epistemic dogma and technological advances, been orienting our fascination over brain-based addiction. We might be able to view the BDMA as a mythology that has a cultural function just as the "inner will struggle" view of addiction in temperance thought. Perhaps as an idea construct that we need and breed because of the socio-political reality we live in.

No doubt, the fragmented saga of small areas of the brain that can be repaired to make us better people germinates in times of belief, trust and hope in great scientific innovations. At a time when humans are much more likely to die of lifestyle-related "self-inflicted" health problems than of violence, famine, or war, the flagship project for humanity has become to outwit disease and death, to regulate

ourselves on an advanced molecular level of governance. It is a comforting thought that white-coated people in laboratories innovate serums and devices that will prolong our lives, and can help us develop our bodies into cyborgs over which we have more or less control.

My intentions are not to claim that brain-based knowledge could not offer possibilities to cure illness and improve our wellbeing. But the point I am trying to make concerns the great socio-historical opening for a power allocation through which subjects are defined and governed through the human organ of the brain. Just as in the situation that Levine accounts for, the history of addiction ideas has now reached a stage when, for different cofounding reasons, the brain-based model is likely to have great popular penetration. It makes sense in our understandings of who we are and where our problems stem from. And there are enough resources and technologies for allowing us to view it as a realistic way of solving the problems of addiction.

Levine (1978) also discusses Riesman, Denny, and Glazer (1950), who have characterised the property-owning middle class in the 18th century as "inner directed". This refers both to the particular way in which conformity was assured, and to a concern with the integrity and inner experiences of the individual. Thus, the distinctively middle-class literary form, the novel, made its domain the exploration of the nuances of daily life and inner experiences (Riesman et al., 1950). The novel became a place where the inner struggle of the drunkard was portrayed. The rise of middle-class society was the precondition for a literature that incorporated narratives of everyday experience, and it was also a precondition for the new way of seeing the drunkard. The novel was a cultural genre that served the individualised inner struggle of addiction, in the same manner as we sometimes speak of the television talk show format of the 1980s and 1990s serving a therapeutisation and psychologisation of society.

If the novel offered a place to scrutinise life trajectories and change in the 18th century, the saga of prosperous digitalised societies not only enables the story of addiction from a therapeutic and individualised perspective, but also involves bits and pieces of a science fiction mythology based on the fascination over the discovery of the "*tiny bit of the brain*" that "*could offer clues about addiction*". What role, then, has the field of addiction science played in the historical developments of incorporating the brain-based governmentality? If one way of understanding the rise of the BDMA is to see it as anchored in a socio-historical extrem-positivistic and technologically advanced mode of bodily governance, another way of approaching the question is to see it as entangled with developments in the field of addiction research.

Stepping in: Scientific practice

With so-called addiction-related behaviours – excessive appetites, dependency, compulsions, or whatever we choose to call this bundle of phenomena – the main trait of problem definitions can be traced to the dominant ways of approaching the questions scientifically. An archaeology into how this knowledge field has progressed, not only involves a necessary self-reflexive understanding of *who we are as scientists articulating the nature of the phenomenon* and *how we choose to approach* the phenomena of our inquiries. It also entails the necessary awareness of the fact that we cannot disentangle ourselves from the things we describe, but we *are part of the phenomenon* and are thus *modifying it when we are studying it*. In order to comprehend the current discussion surrounding the BDMA, we might need to view our work as scholars as taking place within our own constructions (and theories) of addiction.

The perspective of being part of the phenomenon we investigate can be understood through the feminist theoretical concept of diffraction, which questions the independence and bounded nature of entities of study objects. Quantum physicist and feminist theorist Karen Barad articulates this position in her agential realism theory partly inspired by the work of Danish physicist Niels Bohr. Barad

(2007) urges us to rethink how we understand the relationship between discourse and materiality in our research practices, analysis, and presentation. According to Barad, when we approach a phenomenon (describe it, measure it, perform it, perceive it), we will inevitably be involved in changing it, in forming and affecting it. This involves the idea that there is no ontological separation between the phenomenon and ideas that we research, on the one hand, and our work as scholars, on the other.

When we make distinctions between subjective and objective "things" in different places at different times, we do not uncover pre-existing facts about independently existing things. We ourselves bring such "things" into existence by making the distinctions. The shift towards seeing ourselves as researchers as entangled and not separated from the phenomena of addiction involves the view that we see the separations to the phenomenon as becoming solidified through repetition of boundary-making practices or material configurations of our own activity (Barad, 2007).

What, then, has been the boundary-making practice of the addiction science field in the past 50 years or so? What sort of distinctions have played a role in the materialisation of the scientific object of addiction by the addiction research field when seen together as a one massive field of knowledge production? The most influential disciplinary traditions of addiction science have moved within positivist evidence-production of medicine, public health, and psy sciences. They have involved scientific practice that presents itself as standing at a distance measuring and representing. Discussions that extend beyond proof-producing and daily political matters have often been seen as a fetish of small groups of sociologists and anthropologists in the margins. Such a modus operandi may, at a certain point, become so epistemologically homogenised that the science field is no longer characterised by objects, themes or concepts, but by a certain style, a certain "constant manner of statement" (cf. Foucault, 1972, p. 33). Might the BDMA just be the next logical step in an area of research that has structurally prioritised positivism over metareflexivity of scientific practice? Science production may have simply moved from domains of counting and measuring human cases and traits to the counting and measuring the chemistry and architecture of the brain.

Seen in a socio-historical and an agential-realist view, the critique of the BDMA from within the addiction research field stems from the same norm of credibility as is practised by the proponents of the BDMA (or "the advocates of the NIDA [National Institute of Drug Abuse]", as Fraser et al., 2014 refer to them). As of yet, the discussion has not involved a socio-historical self-reflexivity regarding the ways in which its own distinctions between subjective and objective "things" in different places at different times have steered the progression towards the rise of the addicted brain.

To conclude

Massive amounts of funding are directed to neurological research, and popular media representations articulate on a daily basis great excitement over the possibilities offered by brain-based knowledge. Heather (2018) importantly points out that no theory consisting of descriptions of the activity of neurotransmitters, synapses, and neural pathways can ever amount to an adequate account of addiction. To believe otherwise is to subscribe to "greedy reductionism" (Heather, 2018). However, in applying the two perspectives that I have suggested, we might end up concluding that our own greedy reductionism has paved the way for technical brain-based solutions. As a research field, we may have painted ourselves into a corner in which we lack the instruments and concepts needed to properly fight reductionism. In a Baradian perspective, it might even be that the discussion that makes a distinction between addiction being in the brain and not being in the brain, as it stands, ends up serving the direct opposite end than intended.

In this editorial, I have suggested two perspectives that I claim allow us to encapsulate

positions of actors, power allocation and understandings over time in the ongoing discussion on the BDMA. The first is to "step out" and view the rise of the BDMA and its proponents and critics from a socio-historical perspective. The second is to "step in" to this epistemic trajectory and pay attention to the diffraction patterns that we ourselves perform in studying – and at the same time affecting – the phenomenon of addiction in different ways. If we neglect the socio-historical perspective the debate risks circling on the level of who is right about the phenomenon's nature, which relegates the socio-political as external to epistemic practice.

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